CLINICAL MEDICINE

VOLUME 50 MAY, 1943 NUMBER 5

Editorial

Dr. Jaime Ferrán

IT IS surprising how frequently even rather superficial researches in the history of medicine substantiate the validity of the old saying, "There is nothing new under the sun."

Most of the medical world was rather startled when, in 1930, Calmette announced: "It is necessary to admit that the bacillus, discovered in 1882 by Robert Koch, represents only one of the stages of evolution of a form of resistance to the virus of tuberculosis."

As long ago as 1897, however, another celebrated bacteriologist had stated (and Calmette and others had ridiculed him!): "We must abandon the false conception which we have held, as to the etiologic unity of tuberculosis, which we have attributed exclusively to Koch's bacillus. This bacillus is the terminal stage of the natural evolution of a non-acid-fast bacterium, whose development takes place in the midst of a complex medium, such as a tuberculous animal."

This far-sighted statement was largely overlooked by Americans, because its author was not a German, but a Spaniard, Dr. Jaime Ferrán y Clua, of Barcelona, whose very name is unknown to many, although he was one of the illustrious pioneers of immunology and preventive medicine—in fact, the founder of immunization by means of bacterial vaccines.

Ferrán was born, February 2, 1852, in Corbera, Spain, and studied medicine and was graduated in Barcelona, at a time when Pasteur's germ theory of disease (announced in 1864) was still a subject of controversy and was not generally taught in the medical schools. It fascinated the young Spaniard, however, and he took up the study by himself, in his own home, to such purpose that, when an epidemic of cholera broke out in Valencia, in 1884, he prepared, and used with great success, a vaccine made from attenuated, living bacteria.

Dr. Ferrán was, preeminently, the solitary research student, working out his revolutionary ideas alone and little moved by the scoffing of the ignorant and prejudiced rabble.

In 1894 he prepared an effective vaccine against tetanus, and later others against typhoid, typhus, rabies and plague. The use of the last-named prophylactic resulted in the saving of hundreds of lives during the plague epidemic in Oporto, in 1899.

Ferrán had the idea of serum therapy before it was promulgated by von Behring and Kitasato, having observed that the blood of cured cholera patients protected well people against the disease. He also prepared a curative serum for use in diphtheria.

As if this were not enough to assure his fame, he added to his accomplishments, in middle life, the discovery of the pleomorphism of the tubercle bacillus, which is thus described, in picturesque

Spanish, by one of his countrymen, Count de Gimeno, who was proud to call him "Master":

"He discovered that the bacillus of Koch, long recognized as the sole and indisputable factor in tuberculosis, is not the principal, much less the only factor in the pathologic drama, but the final descendant of a maleficent microbial dynasty, whose mysterious geneologic tree Ferrán exposed to the light, after labors which were as long as they were tedious, and as difficult as they were admirable."

The work of this great and wise pioneer of bacteriology and immunology came to a close on November 22, 1929, he being seventy-seven years old.

✦

Happiness is not a reward—it is a consequence. Suffering is not a punishment—it is a result.—ROBERT INGERSOLL.

✦

Lymphogranuloma Venereum

IT IS now coming to be widely recognized that a fourth venereal disease, *lymphogranuloma venereum* (formerly called "tropical bubo," "Nicholas-Favre disease," etc.), is, perhaps, as widely distributed and common as the other three that are so much better known.

Our tardiness in recognizing this fact is probably due to the relative insignificance of the transitory primary lesion (so that it is often overlooked) and the absence, until rather recently, of specific diagnostic tests, which are now available.

The etiologic agent is a filter-passing organism, visible under the microscope, whose life cycle is now being studied. The incubation period, after exposure (almost always by sexual intercourse), is about two weeks.

The primary lesion (usually on the genitals) looks like a collapsed herpetic vesicle, and is followed, immediately or after several weeks, by enlargement of the inguinal glands, generally on one side, but sometimes on both, often accompanied by general malaise, fever, and joint pain. The bubo may be as large as a fist and the skin over it is purplish. It may be replaced by *elephantiasis* of the affected structures. There is no specific change in the blood picture.

Frequently (but not always) the bubo breaks down and discharges thin, bloody material through *several* openings. Secondary infection with pyogenic organisms may take place; if not, the discharge is *free from bacteria*.

Intradermal tests with the *Frei antigen*, and *complement-fixation tests* with chick antigen (Lygranum C. F. — Squibb) are positive in cases of this disease, and in many persons who have been exposed but show no clinical symptoms.

Until recently there has been no satisfactory treatment for lymphogranuloma venereum, but since 1938, reports show that sulfa drugs (sulfanilamide, sulfathiazole, and sulfadiazine) give good results. This should encourage our readers to watch for the disease and treat it promptly and with confidence.

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A noble example is not noble except to those who are noble.—MANLY P. HALL.

✦

Professional Courtesy

EVERY physician should have a right to expect the most complete courtesy from all of his brothers, in their professional relationships; though this does *not* extend to covering up negligence, carelessness, or gross ignorance.

The following true story is an illustration of perfect and *intelligent* professional courtesy:

A prominent and wealthy man consulted an eminent internist in one of our large cities, who makes wide use of special vaccines and other parenteral methods, and was started on the program of meticulous examinations, extending over several days, that are customary in that office, but was given *no treatment*.

That night, the patient was taken suddenly and severely ill, and as the internist ("Dr. Blank") could not be reached by telephone, another physician ("Dr. X") was called in and found the man in a critical condition.

While describing the onset of the attack, a member of the family expressed wonder as to what "Dr. Blank" had injected into him to cause such trouble.

"Dr. X" did not shrug his shoulders, as some would have done, and thus permit the family to think he believed that "Dr. Blank" had made some serious mistake, but, realizing the gravity of the situation, immediately called a man of

national reputation in consultation and, when the patient died before morning, insisted upon an autopsy, which disclosed that he had succumbed to a malady having no possible relation to any (supposed) treatment he might have received, and which could not have been discovered at the preliminary examination "Dr. Blank" had made. This, of course, disabused the minds of the family of any false notions they had been harboring, and made a firm, grateful, and highly valuable friend of the man whose reputation had been protected.

It will be well to remember this story whenever you are called to attend another doctor's patient in an emergency, for such courtesy makes a deep impression upon all who come to know of it.

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A man cannot speak but he judges and reveals himself.—EMERSON.

◆

Teaching Health

THE Chamber of Commerce of the United States, through its National Health Advisory Council (which includes an impressive number of important names in its membership), is strongly stressing the necessity for a nation-wide program of teaching (it cannot properly be called education) in regard to the maintenance of health.

This idea is by no means new, nor is the need behind it. Much has been said and written along this line for a number of years, but the problem is a good deal bigger and more complex than most of these speakers and writers seem to realize. It is relatively easy to draw up some sort of program, but exceedingly difficult to carry it out successfully.

The most intelligent discussions of the general subject of health education with which we are familiar, are those by Drs. Edward J. Stieglitz, Edward L. Bernays, and Allen Freeman, which appear in a small book recently published,* and announced in these columns in the January, 1943, issue on page 36.

In an undertaking of this sort there are two main factors — the teachers and the taught — and if real progress is to be made, the former must *really know* the subject they intend to teach, and the latter must be able and *willing* to receive the instruction and profit by it.

Almost all physicians know a great deal about *disease*, but the meagerness of their knowledge about *health* is rather appalling. In fact, there are no clear-cut and reliable criteria to determine *what health is*, to say nothing of deciding whether a certain individual is in a condition that is normal *for him*, with his background and in his circumstances. The profession in general, and individual doctors, need to know a good deal more about health before they can teach it adequately; and teachers who do not *practice what they preach* rarely get far.

The *cure* of disease is dramatic, but its *prevention* is not, and the only way to prove its value is by statistics that have interest and meaning only for *mature minds*, which are relatively rare. Moreover, it is well known that free advice is rarely heeded, and that the pampering paternalism practiced in this country of late has convinced many people that the world owes them health, so they sit down and wait for the "Government" to deliver it to them, without effort on their part.

The public health departments, and various organized private agencies, are spending large sums of money on programs of mass and impersonal health teaching — most of which doesn't "take" at all promptly, though it may have some effect in a decade or two.

The most important agents for the solution of this problem are the *family doctors*, who come close to the people and can deliver an *individual* message to them, *if they know how*. To be truly useful in this function, these men must train themselves, as promptly as possible, as *Doctors of Private Health*, and then go out and sell prophylaxis to their people, *at a price*. Only when these potentially powerful teachers add their enthusiastic and intelligent efforts to those of the public and private mass-production teaching agencies, will any truly efficient program of health teaching be possible.

*"A Venture in Public Health Education," Columbia University Press, New York City, 1942.

LEADING ARTICLES

Anemia in Colon and Rectal Diseases

By CHARLES J. DRUECK, M.D., F.A.C.S., *Chicago, Ill.*

The frequency and importance of anemia, as a cause of obscure complaints, is still being overlooked too often. Dr. Drueck emphasizes this point, with helpful suggestions.

ONE of the systemic changes incident to all digestive disturbances, and materially complicating their management, is anemia. Kracke[1] says, "It is not necessary that there should be organic pathology in order to produce anemia, because a functional disorder, such as hypermotility of the intestinal tract, may prevent the absorption of an adequate amount of iron and other agents necessary for building the hemoglobin molecule." Anemia may, therefore, exist in certain phases of any digestive disturbance, when hemoglobin lags behind red cell production. The anemia, although a striking manifestation, is merely one symptom of the bodily change; the glossitis, flabby skin, and flattened finger nails are just as important manifestations of an iron-deficiency state.

Disturbances involving the erythrocytes, leukocytes, and platelets are often recognized as part of the clinical syndrome of patients as they present themselves for proctologic study or treatment. The pallor, weakness, and loss of weight of which these individuals complain are too frequently attributed to the pain or anorexia dominating the condition, and passed without any further attempt to determine the type of anemia, the character of the leukemic cells involved in the blood disorder, or the underlying cause of a purpuric state.

Causes of Anemia

Anemia, when found during physical examination, is not to be considered as a symptom of any particular colon or rectal disease. It is never primary, but always secondary to some cause or causes, whether or not they are readily discernible. It is a complication due to a decrease in the number of the circulating erythrocytes, or a reduction in the amount of hemoglobin below the normal standard for the age and sex of the individual.

All ulcerating lesions of the bowel produce some anemia, although it may vary in degree, because (1) hemolysis of the blood cells occurs from the toxins produced by the infecting organism, such as the streptococcus, thus producing a hemolytic anemia; (2) an aplastic type of anemia may develop, in which the red-blood-cell and hemoglobin levels are lowered simultaneously, due to toxic action on the bone marrow or other mechanisms of temporary interference with production of blood cells; (3) a secondary purpura, with loss of blood from the ulcerating tissue, causes a lowering of the platelet level or toxic damage to the capillaries, or a combination of the two factors; (4) interference with the appetite or digestion or the absorption of materials necessary for the formation of red blood cells and hemoglobin may result in anemia of the dietary type.

Aplastic, aregeneratory, or paralytic anemia may develop as a complication of cancer or following radiation therapy for the neoplasm, or from arsenic, lead, or mercury poisoning. It has also been reported with intestinal parasites.

Pathology of Anemia

The pathologist, after hemoglobin, erythrocyte, and hematocrit determinations, classifies the particular specimen as:

1. Macrocytic or hyperchromic, be-

[1] Kracke, R. R.: "Diseases of the Blood," 2nd edition, J. B. Lippincott Co., 1941, p. 214.

cause of giant red blood corpuscles, abnormally rich in hemoglobin.

2. Normocytic or normochromic, when the non-nucleated erythrocytes are normal in size, number, and color.

3. Microcytic or hypochromic, when there is a deficiency in size and color of the red cells.

The classification of the anemias, based on the size and hemoglobin content of the red blood cell, is of assistance in the diagnosis, prognosis, and treatment of many diseases.

Symptoms and Physical Findings

The symptoms of anemia in a proctologic patient are not confined to the blood morphology, but are a part of the general complaint. Anemia, of greater or less degree, accompanies or is associated with the majority, if not all, diseases of the gastro-intestinal tract, as well as with various errors in hygiene and diet, and is itself responsible for so considerable a proportion of the symptoms and the disability engendered by these diseases that secondary anemia constitutes a constant and serious problem in the diagnosis and treatment of the primary disturbance.

Since the clinical manifestations of the anemia begin insidiously, it is very difficult to determine the date of onset. Many patients suffer with digestive difficulties for a long while before consulting a physician, and others endure indefinite complaints and malnutrition from childhood.

The classical and popular sign of anemia is pallor of the skin. It is often the first sign noticed by the friends of the patient suffering with digestive disturbance. In many mild cases, however, it may be absent, because of some natural or artificial tint to the skin, and the blood changes are then discovered only in the course of routine examination.

Systemic symptoms resulting from the anemia itself depend, fundamentally, on an insufficient supply of oxygen to the tissues, and include headache, vertigo, tinnitus, faintness, weakness, increased fatigability, irritability, lack of concentration, disturbance of vision (as black spots in front of the eyes), and sensitiveness to cold.

Cardiovascular symptoms are dyspnea, palpitation, and a rapid pulse, with low blood pressure and systolic murmurs.

The gastro-intestinal symptoms may include nausea, vomiting, anorexia, constipation or diarrhea, malaise, and loss of weight. The diarrhea in these patients is usually attributed to the achlorhydria. Inasmuch as any or all of these may be the patient's primary complaint, it is obvious how easily a mistaken diagnosis may be made.

In severe cases, where the liver is involved, exacerbations of jaundice may occur, associated with severe abdominal pain and fever. The liver may be enlarged, but the spleen usually is not palpable.

One of the most important findings of the anemia associated with digestive dysfunction is *achlorhydria*.

The degree of anemia caused by, or associated with, these conditions varies greatly. It may be extremely mild or very severe, but certain characteristics are always found on the blood examination. Hemoglobin is reduced to some degree, and always more than, or in equal proportion to, the reduction in red cells; therefore, there is a *low color index*, which is one of the chief characteristics. There may be no or only slight changes in the red cells. If present these consist of more or less marked *microcytosis;* in the very severe anemias there may be some *anisocytosis* (inequality in the size of the red blood corpuscles) and a few polychromatophylic cells (staining many colors); and, at times, even a few nucleated red cells.

In the aregeneratory anemia associated with malignant tumors, *glossitis* is a most distressing complaint.

Many adult patients with chronic or recurrent bleeding lesions of the lower bowel present a long history of digestive disturbances or anemia or both, beginning in childhood.

Usually multiple etiologic factors are necessary before a well-defined anemia results. The condition frequently found in sufferers with spastic colitis or hemorrhoidal disease, and in middle-aged women, is doubtless the end-result of several factors, the most important of which is an impaired or partially atrophic gastric mucosa, shown by a histamine achlorhydria. These patients have, first, a disturbance in digestion of the iron-containing foods; then great diminution of the digestive secretions; and perhaps, later, pernicious anemia. Such gastric disturbance begins early in life and, if continued through adolescence and early adulthood, may be recognized as the iron-deficiency known as chlorosis.

Chlorosis

Chlorosis is a disease of girls; chronic hypochromic anemia is a disease of the menopause. Both conditions, characterized by a chronic iron-deficiency state, are associated with the beginning and end of the menstrual cycle. These patients with a long history of a poor,

capricious appetite; a hereditary or congenital factor (an anemic mother); hypochlorhydria or achlorhydria; and menorrhagia, are prone, in adult life, to develop colitis, hemorrhoids, and *varicose veins* of the legs, vulva, and pelvis. This chain of sequences seems to suggest that adolescent girls require much more iron than the boys, chiefly because of the great increase in growth which takes place, together with the onset of a regular loss of blood. When a girl is already at a disadvantage because of poor heredity, a poor diet, or a poorly-functioning gastro-intestinal tract, the added demands for iron by the growing organism probably are just sufficient to bring about the full-blown picture of chlorosis.

Case Report

Mrs. C. C., age 48 years, para 4, weight 200 pounds, has had "stomach trouble" ever since she was a girl. She was 20 years old when her first baby was born. At age 25 she had a pelvic tumor removed. At age 36 she had the veins of both legs ligated and injected for varicosities. At age 44 she had her gallbladder removed. Now she complains of cramps in her legs and abdomen, constipation, and "tightness" at the anus.

Examination: Large varicosities were present in the veins of both legs. These veins "swell and cramp" when she is up and about. The labia were large and flabby, with prominent and tortuous veins. She says they ache when she is upon her feet. Several weeks ago she fell down the cellar stairs and bruised her back and buttocks. Since then she has had constant pain in the lower part of her spine and up within the rectum. As she lay on the examining table the rectum appeared normal, but when she strained, as at stool, the anal mucosa became turgid and pouted.

Varicocele of the broad ligament may occur as a sequel to fibroid of the uterus, and this woman's pelvic heaviness and pain may have been from that source, though that is speculative. She had very definite varicosities of the legs, vulva, vagina, rectum, and abdominal skin, and a hematoma or rupture of any of these veins might produce a serious or fatal hemorrhage.

Though this woman was overweight her blood morphology showed:

Red blood cells	3,020,000
White blood cells	9,200
Hemoglobin	72%
Color index	0.85
Neutrophiles	68
Lymphocytes	26
Monocytes	4

She was given a well-balanced anemia diet, supplemented with hydrochloric acid and iron, by mouth, and requested to take one hour's recumbent rest at mid day.

At present her red blood cells have risen to 4,123,000, her white-cell count is 8,000, and she feels comfortable. Whether the treatment has been curative, or only palliative, remains to be determined.

58 East Washington Street.

Disorders Due to Heat

	Heat Cramps	Heat Exhaustion	Heat Stroke ("Sun Stroke")
Symptoms	Conscious patient; temperature normal; pulse normal or fast; skin normal; cramping pains.	Conscious patient; subnormal temperature; pulse weak and fast; skin pale and cold—"shock" appearance.	Unconscious patient; fever (105° F. or higher); pulse very strong and very fast. Skin *dry* and very *hot*.
Time	Occurs in the early period of a hot spell.	After some hours.	Usually after second or third day of a hot spell.
Age	Any age.	Usually in older persons and those with systemic disease.	More often in older persons, but may occur at any age.
Treatment	Oral or intravenous use of sodium chloride.	Warmth; rest; lay patient down flat; stimulants.	Ice bath or ice pack at once.
Prevention	Daily use of coated salt tablets and ample water.	Daily use of salt tablets and ample water.	Avoid exposure to overheating and sun for several days.

—F. J. ELIAS, M.D., in *Minn. Med.*, Dec., 1942.

A Simple Apparatus for Intravenous Infusions

By JAMES A. DUNGAN, M.D., *Greeley, Colo.*

A SIMPLE and inexpensive, but highly useful, apparatus for administration of dextrose, plasma, physiologic saline, and other solutions intravenously, can be made by any good blacksmith at little cost.

The bottle for the solution, of 1000 cc. capacity (see A, Fig. 1), is round; 8¾ inches tall; diminished at the top for the stopper, which is of rubber and twice perforated for two glass tubes, one of which (¼ inch in diameter and 2¼ inches long) carries the solution, and the other, of the same diameter, and 9½ inches in length, is for vacuum replacement, and extends, as nearly as is desired, to the bottom of the bottle. The stopper is 1¼ inches in thickness and measures 2½ inches across the top.

The rubber tubing, which is of translucent gum-rubber, is 50 inches long, has an inside diameter of 3/16 inch, and is cut 9 inches below the bottle, for the insertion of a dripper (B, Fig. 1. I use the type furnished by Baxter). Six inches below this latter a screw compressor (C, Fig. 1) is attached, for regulating the flow of the solution. At the distal end of the tube is a glass coupler, ground at the open end to fit a Luer needle, which may be of the gage desired, although I have found the Erusto Luer-Lok, gage 22, most satisfactory.

The needle being inserted into the vein selected, after the usual precautions of sterilizing the solution, bottle, tubing, dripper, coupler, needle, and lastly the skin at the chosen site, the tube should be taped to the top of a hot water bag (G, Fig. 1), to keep the solution at body temperature, after the flow of the solution is regulated. This flow, in the case of dextrose solution, should be about 85 drops per minute.

The sterile solution of dextrose, or other solution, having been poured into the bottle, the screw compressor is closed tightly, the stopper firmly pressed into place, and the bottle inverted, when a few drops of solution will be seen to escape, which indicates that the vacuum-replacing tube is being cleared. The tubing, with all attachments, is then fed downward through the large ring, 3½ inches in diameter (D, Fig. 1), which is clamped to the supporting rod at the side of the bed. Lastly, the bottle is placed in the ring, where, with the rubber stopper firmly pressed into place, it will remain, although, if desired, for extra safety, a second and larger ring may be used over the upper end of the bottle.

The upright iron rod, 1 inch in diameter and 4 feet long, is diminished at the upper one foot to a diameter of 5/16 inch, for the attachment of the clamp

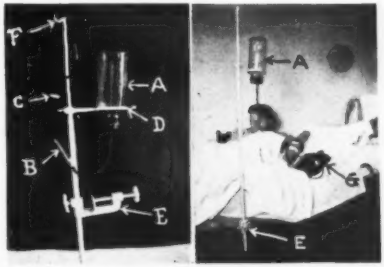


Fig. 1: (Left) Infusion Apparatus, showing arrangement of parts; (Right) Apparatus attached to bed and in use. A—solution bottle; B—dripper; C—screw shutoff; D—supporting ring; E—bed clamp; F—hook; G—hot water bag.

that fastens the ring, and at its lower end goes through a hole in the adjustable iron clamp (E, Fig. 1) fastening the apparatus to the bed. The top end of the rod is bent over to form a hook (F, Fig. 1), used to support the tubing, when not in use, or to hang an enema can or a container of plasma or other prepared solution.

Air bubbles can be well seen in the translucent tubing, and can be eliminated by allowing a little fluid to course through the tube, before the needle is attached; and by a process of raising and lowering the tube, the final air bubbles will probably be next to the needle, and can be forced out through it with a little more of the fluid.

If it is desired to refill the bottle, the ring is lowered, again attached, and the bottle removed, the stopper taken out, solution added, and the bottle replaced without shutting off the flow, when, of course, the ring should be again raised to the former level.

When the bottle is lifted out of the ring and lowered, the rubber tube carrying the solution to the dripper is flat-

tened against the ring, and stops the flow. While the bottle, after removal of the stopper, is being refilled, the stopper with its tubes (glass) hangs suspended and maintains the stoppage. I have done this in all cases, and no air bubbles have interfered, or even appeared, so far.

The water used for solutions is Deep Rock, single-distilled, which can be purchased anywhere in this country in 5-gallon carboys. Merck's Anhydrous Dextrose powder, C. P., is used for that solution, which is sterilized before using. Supplies of solution can be made and sealed in Mason jars for future use.

This apparatus can be attached to any bed, although, on occasion, the bed clamp may have to be inverted, to accommodate the peculiar "set" of the bed-rail.

With this simple apparatus, intravenous infusions can be given, at a hospital or in a home, with a minimum of trouble and expense.

1539 Tenth Ave.

Sulfathiazole Nasal Jelly for Colds

A New Applicator

By R. STEWART MacARTHUR, M.D., C.M., *Los Angeles, California*

SULFATHIAZOLE nasal jelly was devised because of the reports as to the bacteriostatic action of the drug on streptococcic and staphylococcic infections of the nasal mucosa. The jelly was placed in sealed collapsible tubes because fresh solutions deteriorate within one week, even when kept in dark colored bottles.

No deterioration was observed in any of the tubes of jelly after a period of eight months had elapsed.

Clinical Trial

About thirty physicians who used the method have reported marked clinical improvement.

Over 2,000 patients with colds have been treated with this jelly. Relief was reported in every instance except one, the patient in this instance using an oily spray (which destroys nasal ciliary activity) at the same time as the jelly.

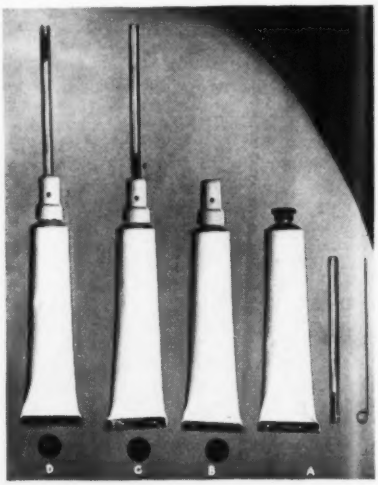
Safety

If the whole tube's contents of four drams were taken either by nasal instillation or by swallowing, the patient would receive only the equivalent of a single does or 7½ grains of sodium sulfathiazole.

Toxicity tests were used on two groups of dogs. The sulfathiazole nasal jelly was instilled both nasally and rectally, as well as by intraperitoneal application. Blood counts were taken after six days treatment; normal differential counts were found. Autopsy findings on these animals did not show any pathologic changes. At the end of 6 days, *very* slight sulfone traces were found in their blood.

Conclusion

On a comparative basis of body weight, it would be necessary to use 30 times the experimental dosage, or 180 cc. of the jelly, over a period of 6 days before any appreciable concentration in the blood would be manifested. The systemic toxicity of sulfathiazole nasal jelly, especially in the dosage recommended, can be considered nil, for practical purposes.



MacArthur's applicator for sulfathiazole jelly.

Hydrogen ion concentration tests were also made. The pH of the jelly ranged from 8.1 to 8.4.

4757 South Broadway.

Vaginal Hysterectomy Without Ligating or Clamping the Uterine Arteries

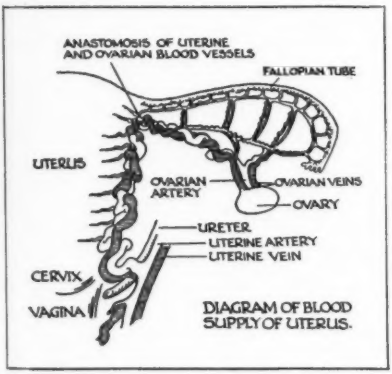
(Modified Pratt Method)

By WM. A. GUILD, M.S., M.D., *Chicago, Illinois*

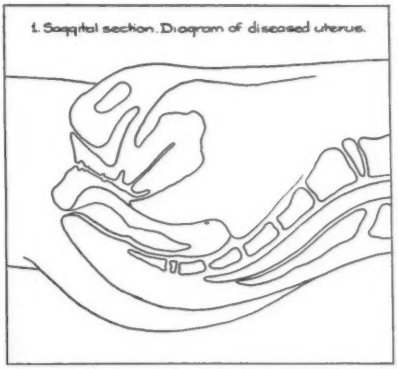
Dr. Guild's technic of Vaginal Hysterectomy is so adequately illustrated that every reader doing this type of work can easily follow his procedures.

GIVEN a case in which hysterectomy has been decided upon, if the vaginal route is not contraindicated, it is the operation of choice. In vaginal hysterectomy the following technic offers several advantages:

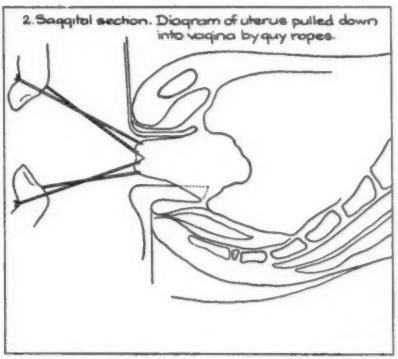
(1) There is less operative shock; (2) the pelvic peritoneum is less susceptible to traumatic and bacterial insult; (3) all structures involved, especially the uterine artery, are in view and easily accessible to the operator's instruments and fingers; the ureters are well out of the field of operation; (4) healing is more rapid and the pelvic floor is made more secure if the blood supply via the uterine arteries is preserved; (5) destruction of tissue and crushing of vegetative nerves is minimized; (6) the patient has no pain or discomfort, rarely any fever, and requires fewer hospital days; (7) the hospital nurses are relieved of much postoperative attention.



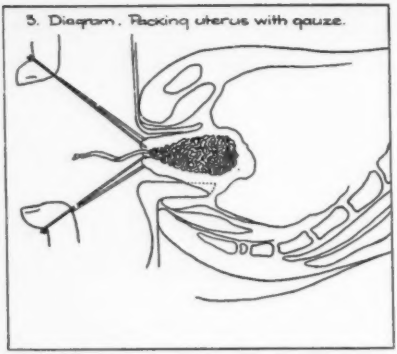
A. The relationship of the main uterine artery to the uterus and ureter.



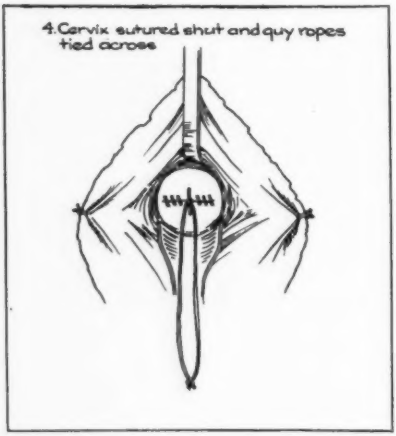
1. Anatomic relations of the bladder, vagina, uterus and rectum, the postvesical space, cul-de-sac and symphysis pubis.



2. With the patient in the Trendelenburg position, heavy braided silk guy ropes are sutured firmly in anterior and posterior lips of cervix; dilation and curettement are performed. The uterus is pulled well down into the vagina. Posteriorly, the correct sized Sims speculum is used; anteriorly, a flat curved speculum wide enough to protect and elevate the bladder, (a large metal tongue depressor may be found ideal).



3. The uterine cavity is firmly packed with narrow gauze or candlewicking moist with antiseptic, giving firmness to the body of the uterus.



4. The cervical opening is sutured firmly to make it water-tight and the guy ropes tied together across the os. This removes the volsella from the field and permits free manipulation of the cervix.

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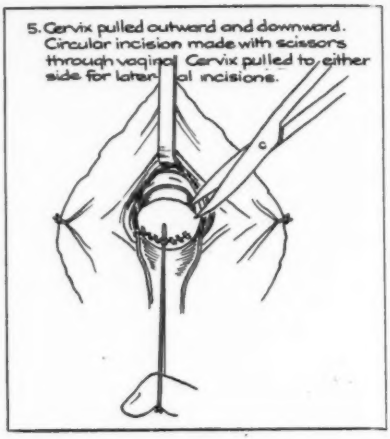
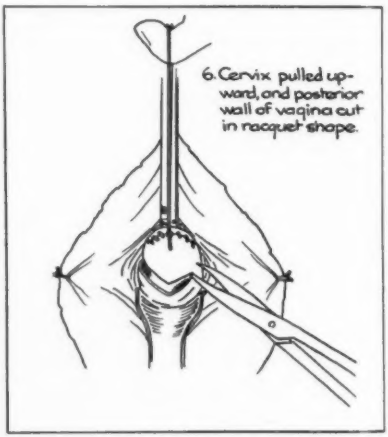
The New Pioneers

The great frontiers that represented opportunity for our pioneers in the past are virtually closed. Our future progress, our future prosperity, will come from the discovery of new materials, new processes, and new uses for old products with which further to enrich the lives of men.—THOMAS J. WATSON, in Think.

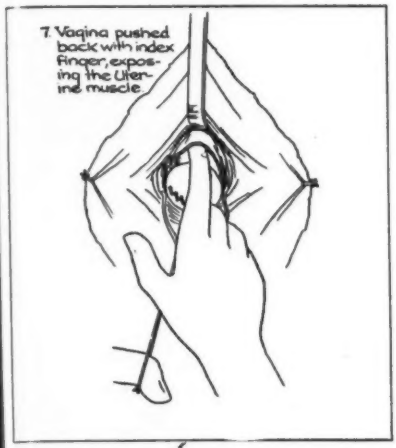


5. With a finger in the guy rope loop, the cervix is first firmly pulled outward and downward, an anterior circular incision is made with scalpel or scissors through the vaginal structures down to, but not into the muscular cervix. This may vary to a racquet shaped incision (for later repair of cystocele). The posterior segment of the vagina recedes because of tension on the guy rope.

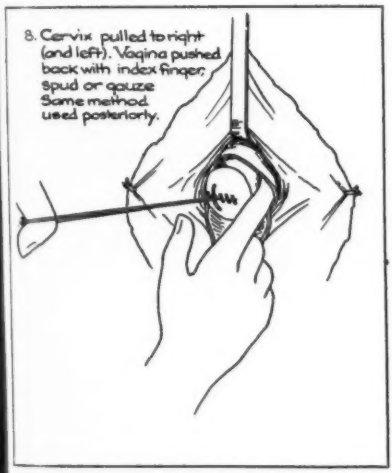


6. The sides are then included in the incision, pulling the cervix aside to expose the field. The circle is completed posteriorly. Variation from the circular incision may provide for the delivery of an extremely large uterus or posterior

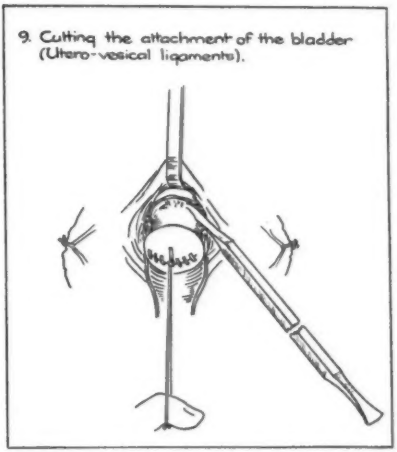
colporrhaphy in closing. Bleeding from the vaginal arteries and veins may be controlled by hemostats or ligatures.



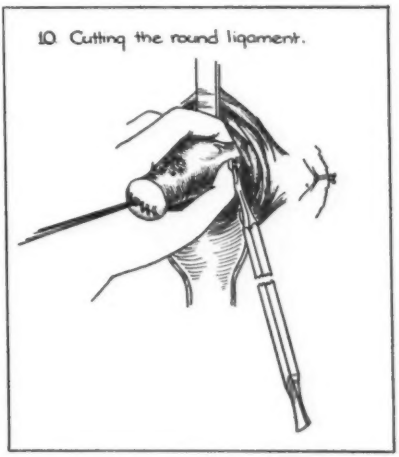
7. Vaginal structures are blunt-dissected away from the muscular cervix with finger, spud or gauze. This progresses toward the bladder anteriorly until firm resistance is met in the utero-vesical ligament.



8. By similar procedure as in No. 7 the sides of the cervix are freed up to the round ligaments and posteriorly to the peritoneum of the cul-de-sac. In any vaginal hysterectomy the surface of the uterus is hugged tightly. In fact, the Pratt technic is an enucleation.

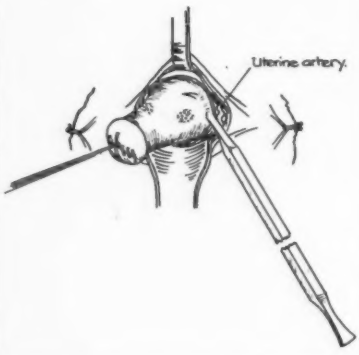


9. After the blunt dissection has been carried as far as possible, the utero-vesical attachment is severed at the uterine wall. Frequently this may not be present. The curved knife illustrated is Dr. Pratt's hysterectomy knife. (Mueller & Co., Chicago)



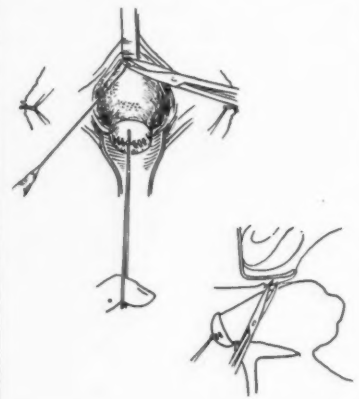
10. The round and utero-sacral ligaments are severed at the uterus on both sides; as the uterus is freed it comes more and more into view.

11. Cutting part of the broad ligament.



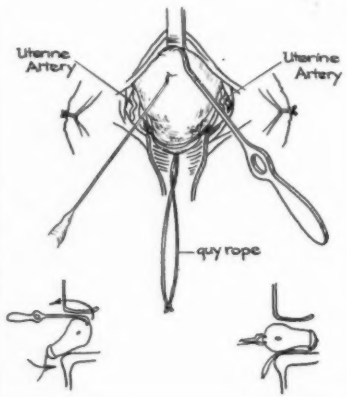
11. The more dependent fibres of the broad ligaments are shaved from the cervix. The uterine artery comes into view ⅛ to ½ inch from the place of incision. The softer tissues are pressed away from the firm uterus by thumb and finger. Other cuts are made, always toward the uterus and hugging its surface, until most of the broad ligament is separated. With each cut the cervix comes further out toward the operator and the fundus becomes well engaged in the vagina.

12. Opening the peritoneum behind the bladder.



12. If for any reason the operator has not used the Trendelenburg position previously, it should be instituted before the peritoneum is opened. A sharp curved hook is introduced close to the fundus and engaged in the pre-uterine peritoneum, and an opening made into the abdominal cavity. This opening is enlarged as needed, but should be by incision, not by tearing with the finger. A temporary guide of suture material may be placed in the peritoneal margin as an aid to closing later on.

13. Delivering the fundus uteri through anterior peritoneal opening.



13. Similarly an opening is made in the cul-de-sac. Traction is released from the cervical guy ropes, and the fundus rotated on its lateral broad ligaments until it appears in the anterior peritoneal opening. It is grasped by a strong tumor hook or double tenaculum and brought fully into the vagina, and a heavy volsella attached. The position of the cervix is now reversed.

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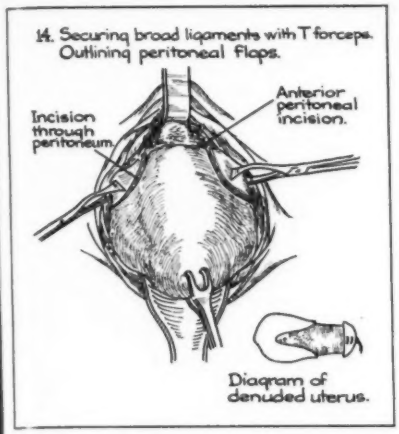
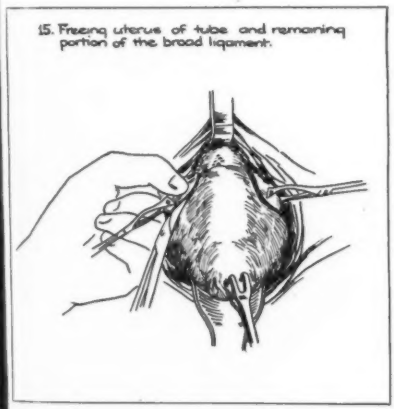
Guard Our Liberties

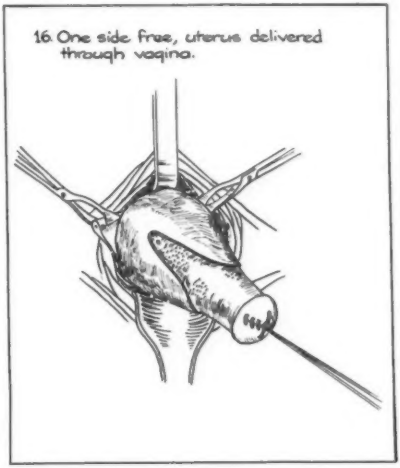
The great task confronting our people today is to protect and defend America without sacrificing the priceless heritage of Liberty enjoyed in this free country for a century and a half, which has been a beacon light, a radiant star of hope, to the oppressed people of every land.
—HUGH S. MAGILL, in Investor America.



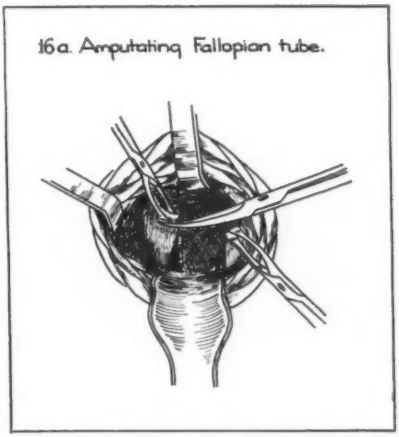
14. Using the volsella as a handle, the uterus is pulled and pushed to one side and a T forceps or heavy Alis forceps slipped over the fallopian tube to grasp the upper broad ligament at its junction with the uterus. Both sides are so treated. With the fundus elevated (and depressed) flaps of uterine peritoneum are outlined to make posterior and anterior margins for each broad ligament to be used in remaking the pelvic floor.



15. One side of the uterus is freed by encircling the tube and attached broad ligament with thumb and finger, pulling it and the vessels away from the uterine fundus. Curved scissors slide in between and the uterus retracts as the attachments are shaved away. A thin portion of the uterine muscle may remain on the ligaments.

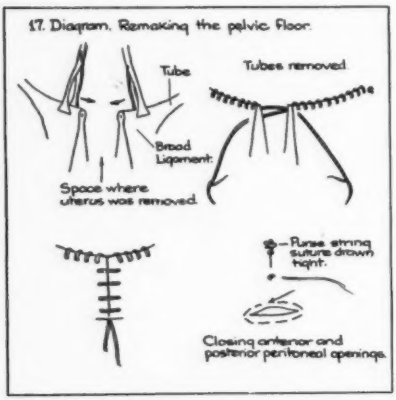


16. If the uterus and its tumors are small enough, it is delivered with the aid of hooks from the severed side, and the opposite side readily freed. If the mass is too large for such a delivery the packing may be removed, the uterus can be divided or returned to the abdomen, and the other side treated as in No. 15.



16a. Salpingectomy, if necessary, can be done without hemorrhage if the tubes are carefully trimmed off the upper margins of the broad ligaments. The ovaries

can be amputated after ligating the ovarian artery. Unless there is bleeding no sutures need be taken in the margin of the broad ligaments except for reperitonizing the area. Very fine (00 or 000) catgut is used.

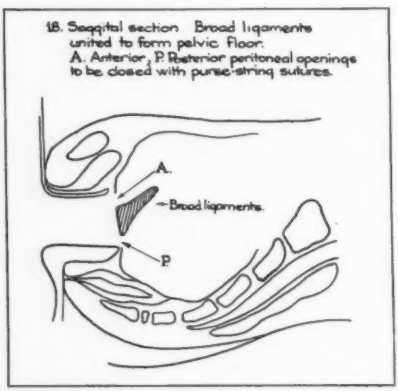


17. *Upper Left:* Diagram of tubes and ligaments with forceps attached after removal of the uterus.

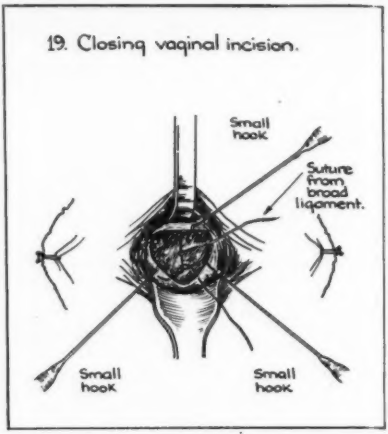
Upper Right: Sutures placed after removal of tubes.

Lower Left: Broad ligaments joined using the same two sutures, ends left long.

Lower Right: Ligaments approximated, upper peritoneal opening closed, the lower opening with purse string placed. The end of the suture from the ligaments is shown long.

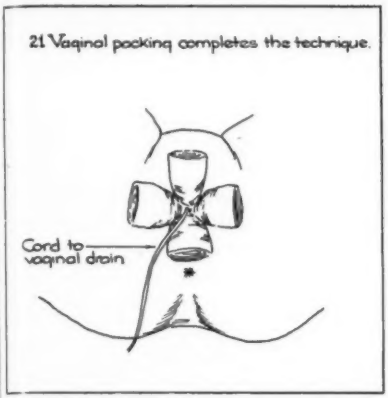


18. Diagram showing new pelvic floor before peritoneal openings are closed.



19. Unless colporrhaphy is contemplated the vaginal incision and fascia are closed with one of the two sutures left after joining the broad ligaments, the other protuding between stitches. This procedure eliminates dead space and brings the vagina up to join the pelvic floor. When vaginal suturing is completed the second strand of suture is tied firmly to the one used in the vaginal closure. A folded rubber drain is placed through the vaginal wall up to the new pelvic floor.

20. A silk cord is tied to the rubber drain to facilitate its removal after 24 to 48 hours. The vagina has been closed in T shape to give normal depth.



21. The vagina may be packed with gauze or wool in a condom; or as is shown here, with 4 to 6-inch lengths of J & J wool tampon material. Both methods facilitate comfortable removal. The cord shown is attached to the flat rubber drain. The retractor sutures are released from the labia. A double T binder is applied over perineal dressings.

This modified technic of Pratt's original vaginal hysterectomy has not been presented as a simplified method, but rather because of its distinct advantages in the hands of a skillful operator, to the patient, the operator and the hospital.

After care is simple. Usually none other than the pre-anesthetic narcotic is needed. Catheterization is ordered for three days to avoid suture and vaginal contamination from urine. The rubber vaginal drain is removed in 24 to 48 hours as determined by the amount of drainage (usually very little). After 24 hours, two of the wool tampons may be removed; or, if condom packing has been used, a portion of its contained packing may be withdrawn. All vaginal packing is removed in 48 to 72 hours unless the patient is coughing. A retention oil enema followed by a high colonic enema is usually in order on the third day.

The patient may sit up on the second day, be out of bed on the 5th or 6th day and safely released in 8 to 10 days, having had little if any post-operative discomfort, no sutures removed and no abdominal scar.

185 N. Wabash

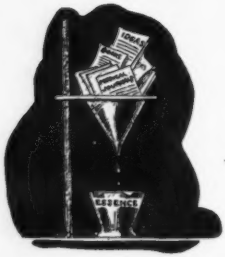
Chronic Ill Health and Brucellosis

In any illness which persists over a long period of time, without definite signs or symptoms appearing, one should think of undulant fever (brucellosis). There may be complete remissions to good health, interspersed between recurrent periods of vague or atypical illness, or, more typically, an undulating course, with partial improvement followed by increase of symptoms. *Ease of fatigue* is the only symptom found in all cases. Aching or pain in muscles, nerves, or joints; sinusitis or postnasal drip; headache; digestive disorders with excessive gas; and low-grade fever are encountered rather commonly.

The history is that of a psychoneurosis or recurrent influenza. *A history of "flu", followed by fatigue or "poor health" for months, is especially significant.* Fever may be present only intermittently and may be so slight as to need temperature records for a week or more to detect it. Occasionally a bone lesion (destruction of cortex in a loculated manner, without periosteal reaction) or a lung inflammation (atypical pneumonia) is shown on the x-ray film.

A blood study shows relative (sometimes absolute) lymphocytosis, and a relative leukopenia, with or without mild anemia with a high color index. The skin test, using *Brucellergin*,* diluted 1: 120,000 with physiologic saline solution, is given in the same manner as the tuberculin test. A positive reaction is indicated by a red, indurated area; a flat reaction persisting beyond 6 days; or ecchymosis not due to puncturing or striking a skin vessel. A definitely favorable response to brucella vaccine confirms the diagnosis. —J. GRIGGS, M.D., in *Northwest. Med.*, Nov., 1942.

*Brucellergin for the skin test is produced by Brucella Lab., Michigan State College, East Lansing, Mich.



CLINICAL NOTES and ABSTRACTS

Microfilm copies of any of the published papers here abstracted, up to 25 pages, may be obtained for 25 cents from Microfilm Service, Army Medical Library, Washington, D.C.

Leukorrhea: Causes and Treatment

LEUKORRHEA is the symptom which brings more women to the physician, causes more misery to the patient and less concern to the physician than any other gynecologic complaint. **The vaginal douche does not cure.** It cannot penetrate the folds of the vagina or glands of the cervix.

Diagnosis	Significance
1. History	
a. A delivery or abortion followed by fever:	Streptococcal infection of cervix and endometrium.
b. Thick, mucopurulent discharge:	Cervicitis (because mucus secreting glands are found in cervix only).
c. Leukorrhea in a virgin:	Endocrine cause; usually too much estrin formation and increased desquamation of vaginal epithelium.
d. Thin, serous discharge with itching:	Trichomonas infection (trichomonas vaginalis).
e. "Cream cheese" type of discharge; intense itching:	Infection with monilia (fungous infection).
f. Green-yellow, purulent discharge; dysuria and frequency may be noted:	Gonorrhea (especially if history of coitus).
g. Discharge in menopausal women, or following radium or oophorectomy:	Secondary infection of vagina; thin, atrophic endometrium.
h. Blood stained discharge:	1. Stenosis of cervix with resulting poor drainage, or 2. Malignancy of uterus.
i. Leukorrhea in children:	1. Foreign body irritation, or 2. Pin worm infestation, or 3. Pneumococcus vaginitis, or 4. Gonorrhea.
2. Pelvic examination a. Labia, perineum and introitus must be examined carefully for:	1. Eczema. 2. Leukoplakia; kraurosis. 3. Hair follicle infection. 4. Skene's gland infections. 5. Pin worms 6. Bartholinitis. 7. Sebaceous cysts.
b. Evert the urethra with a cotton applicator to see Skene's ducts:	Pin point areas of redness at Skene's gland ducts are diagnostic of gonorrhea; pus may exude from them.
c. Acutely red vagina with punctuate areas; profuse serous discharge:	Trichomonas vaginitis.
d. Deep red, almost cyanotic vagina; much thick, white, creamy discharge:	Fungous infection, Monilia or Trichophyton (yeast type of fungous).
e. Dusky, red endocervix with mucopurulent discharge from external os:	Chronic cervicitis (endocervicitis).
f. Pass a uterine sound:	A gush of foul material indicates stenosis of the cervix.
3. Laboratory procedures a. Place a Nitrazine paper in the vaginal secretions:	There is a high pH, which drops to the normal of 4 under proper treatment.
b. Take a smear from the site most affected and look for: (1) Cells:	In the normal vagina, the ratio of pus cells to epithelial cells is one to one; if there are more pus cells, the leukorrhea is infectious; endocrine leukorrhea will show many large keratinized cells and few pus cells; small, degenerate epithelial cells with many pus cells indicates senile vaginitis.

(2) Bacteria:	Large, thick rods (Doderlein) are found in the healthy vagina; short chain streptococci and colon baccilli are frequently found.
c. Put a drop of vaginal secretion in 1 cc. of normal saline solution and spread it on the slide; examine it microscopically:	A motile, flagellated organism is the trichomonas; the branches and buds of a yeast may be found.

4. Routine treatment:

(1) *Shave the vulva:* Practically all of the bacteria, parasites, fungi and yeast may be found in and around the hair follicles. Auto-inoculation is inevitable unless it is shaved. The patient is instructed to wash the vulva and perineum twice daily with soap and water. She must have no intercourse during the three weeks treatment period.

(2) Pass a uterine sound into the os; if a small sound cannot be passed, particularly if it cannot be passed immediately after menstruation, the cervix must be dilated.

(3) Paint the entire vulva and vagina with Negatan (Lilly), which chemically cauterizes the walls; rotate the speculum so as not to miss the anterior and posterior vaginal walls. Within 48 hours, the coagulated epithelium peels off superficially. Repeat in one week.

(4) Cauterize the cervix with the hot cautery or electrocoagulator. The burned out endocervix sloughs out in one week and epithelialization takes 3 weeks.

(5) The patient inserts 1½ drams of Merpectogel, Phenylmercuric nitrate in pectin jelly (1-24,000), into the vagina morning and night for 3 weeks. It is bactericidal and fungicidal. A special vaginal pipe is included in the package.

Summary of Treatment for Specific Causes

Adolescent leukorrhea
Thyroid extract orally
Senile leukorrhea
Stilbestrol (suppositories and orally)
Gonorrhea
Sulfathiazole (suppositories and orally)
Pneumococcus leukorrhea
Sulfathiazole as above
Trichomonas vaginitis
Treatment in 5 steps as listed
Monilia (yeast) vaginitis
Treatment in 5 steps as listed
Trichophytosis infection
Treatment in 5 steps as listed
Mixed infections
Treatment in 5 steps as listed
Pin Worm infections
Gentian violet applied locally and by mouth
Amebic vaginitis
Vioform powder insufflation and tablets orally

—WILLIAM BICKERS, M.D., in *Va. Med. M.*, Mar., 1943.

Cooling in Shock

External heat is not necessary in the treatment of shock (in spite of centuries of teaching to that effect), and may even be dangerous, if the rectal temperature of the patient is above 96° F.

When the blood volume is reduced (as it is in shock), the oxygen supply to the tissues is lessened; and the cooler the tissues, the less oxygen is required, to the extent of a 13-percent reduction of metabolism for each decrease of one degree Centigrade.

A conscious patient in shock should be warmed or cooled, according to his desires; an unconscious patient needs no more external warming than a recumbent normal person under similar general conditions.—Editorial in *J.A.M.A.*, Feb. 6, 1943.

Treatment of Tetanus

A Symposium

The patient with tetanus should be treated by sedation with barbiturates, (such as Nembutal) so that he can be roused for feeding and handled without convulsions developing. Tetanus antitoxin should be given around the primary site of infection or intramuscularly, *never* intravenously. In a series of children treated in Los Angeles, the injection intravenously or intraspinally of large doses of tetanus antitoxin was followed by a high fever (105° to 108° F.), marked tachycardia and death in 80 percent of cases.—S. F. STEWART, M.D., in *Hawaii Med. J.*, Dec., 1942.

A safe dose of tetanus antitoxin, for the treatment of tetanus during the first five days, is 60,000 units, which must not be given intraspinally or intravenously. After the fifth day, 40,000 units is usually adequate.—F. J. HALFORD, M.D., *Ibid.*

I believe that the primary focus must be excised when possible; drainage should be used where excision is not practicable. *Before* such excision or drainage, the patient should receive adequate sedation and a large dose of antitoxin.—GROVER BATTEN, M.D., *Ibid.*

A young girl with tetanus following a criminal abortion did not improve despite 500,000 units of antitoxin and later

curettement. A hysterectomy resulted in spectacular cure in 2 days.—J. LAM, M.D.

A little girl, who had tetanus from thorns in both feet, received 200,000 units of antitoxin without cure. Simple spreading out of the wounds and removal of the thorns cured her in several days. I have had a dramatic cure of tetanus following a hysterectomy.—F. J. HALFORD, M.D.

During World War I, when secondary surgical measures were attempted weeks and months after the original injury had healed, tetanus developed frequently. A regulation was issued that all such openings of old wounds should be accompanied by the injection of 1,500 units of tetanus anti-toxin—W. WINTER, M.D.

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Shock Versus Cardiac Failure

Heart failure must be differentiated from shock *(peripheral circulatory failure)*, as outlined in the acompanying chart.

SIGN	HEART FAILURE	SHOCK
Face	Cyanosis of lips and cheeks.	Pale; some cyanosis.
Skin	Warm.	Cold, moist, sweating.
Pulse	Often irregular	Soft, regular, fast.
Respiration	Labored; poss ble dyspnea.	Rapid, shallow.
Heart	Enlarged.	Small cardiac outline
Veins	Distended.	Collapsed.
Blood pressure	Normal or high.	Normal, *gradually falling.*
Venous pressure	High.	Low.
Blood count	Red cells normal or slight increase.	High red cell count (7,000,000 to 9,000,000); increased amount of hemoglobin.
Position	Uncomfortable while lying on back.	Feels better while lying flat on back or with feet elevated.
Treatment	Rest; head and chest propped up; digitalization.	Blood transfusion or plasma injection intravenously; head low; protect from chilling.

—WILLIAM DRESSLER, M. D., in "Clinical Cardiology" (Harper & Brothers, Paul B. Hoeber, Publisher, 1942).

Typhus Vaccine

Under present conditions, typhus assumes immense importance and, until rather recently, the only method of prophylaxis against this disease has been careful and repeated delousing, because the causative organism, *Rickettsia prowazeki* (in common with all the other reckettsias), will not grow on ordinary laboratory culture media, but only upon living cells.

A method has now been developed of introducing the living cultures of *R. prowazeki* into the yolk sack of developing hen's eggs and, when the organisms have grown sufficiently, removing them, under special precautions, killing by chemicals, testing on animals, and putting up in ampules ready for use. Such a vaccine can be produced in large quantities.

Vaccination consists of three subcutaneous injections, of 1 cc. each, at intervals of from 7 to 10 days. A stimulating dose of 1 cc. may be given every 4 to 6 months, as long as danger of infection is present, and other 1 cc. injections may be administered whenever extra immunization seems to be needed.

The prophylactic value of this vaccine in human beings can be determined only by practical experience.—*Therapeutic Notes*, Oct., 1942.

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Predetermination of Sex

Predetermination of the sex of offspring, with practically 100 percent accuracy, is now an accomplished scientific fact as regards the fruit fly *(Drosophila melanogaster)*, and much progress in that direction has been made with certain mammals, though there is, as yet, no such certainty in regard to men.

It seems to be established that the sex of human beings is established at the time of the fertilization of the egg, depending upon the presence or absence of certain genes in the sperm of the *father*, and is not changed by any dietary or other metabolic factors.—Editorial in *J.A.M.A.*, Jan. 30, 1943.

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Psychic Effects of Androgens

A physician, 32 years old, suffered from eunuchoidism: He had no sexual interest or power, but this disturbed him less than did his youthful and feminine appearance and high-pitched voice, which was particularly embarrassing in telephone conversations, when he was frequently addressed as "Madame."

As a result of these handicaps, he was shy, reserved, sensitive, and easily

disturbed, and suffered from rather severe attacks of depression.

After treatment with methyl testosterone (Oreton-M, Schering), his penis was increased in size and active libido appeared, but what pleased him most was a definite lowering of the voice tone and the development of a more mature and virile appearance. His depressive attacks practically ceased and his general sense of wellbeing was much improved.

In my opinion, the administration of methyl testosterone by mouth, in proper doses, is as effective as injections or pellet implantation, and I consider it the method of choice in adult hypogonadism. — J. P. PRATT, M.D., in *J. Clin. Endocrinol.*, Vol. II, No. 7, 1942.

✦

Peptic Ulcer in the Aged

Peptic ulcer occurs in persons of 60 and 70 years, both in the chronic, recurrent form and in the acute type with perforation, which is often mistaken for an acute coronary attack, as the abdomen is not rigid, in older persons, after a perforation. Both coronary disease and ulcer, or gallstones and ulcer, may be present.

The chronic ulcer, and some of the acute ulcers, present typical symptoms; but certain acute ulcers cause few or no gastro-intestinal symptoms. They should be *looked for*, in older persons, by testing the stool for occult blood and by careful x-ray studies. Acute hemorrhage from a peptic ulcer may cause collapse in an elderly patient.—O. SAPHIR, M.D., in *Am. J. Dig. Dis.*, Jan., 1943.

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Ultraviolet Irradiation of the Blood

By use of the Knott hemo-irradiator, a certain amount of the patient's blood is withdrawn and citrated, then exposed to ultraviolet rays and returned intravenously to the patient. This procedure has been used 6,000 times, over a period of four years, without harmful effects. (See Fig. 1.)

Indications: Ultraviolet irradiation of the blood has proved life saving to patients with peritonitis, septicemia and other severe infections. Many of these cases had been treated for a number of days with sulfonamide drugs, blood or plasma transfusions, adequate surgical care and all other modern methods, but did not recover from toxemia until the treatment was begun.

Method: Two needles are inserted into the patient's veins for withdrawal and return of the blood, just as in the giving of a transfusion. The machine automatically pumps the blood through and regulates the amount of ultraviolet rays.

This work has been carried on at the Hahnemann Medical College Hospital of Philadelphia and the Shadyside Hospital, Pittsburgh. — GEORGE MILEY, M.D., and ELMER REBBECK, M.D., in *Rev. Gastroent.*, Jan.-Feb., 1943.

Fig. 1.—1. Glass tipped adapter for the suction or withdrawal end of the rubber tubing system. 2. Glass tipped adapter for the injection end. This tip is fitted to a needle in the patient's vein. Citrated blood that has just passed through the irradiation chamber (4) is returned to the venous circulation through this adapter. 3. Water-cooled, mercury quartz burner—the source of the high intensity ultraviolet energy used in irradiating the blood. 4. Knott irradiation chamber with quartz window held in contact with the mercury quartz burner; blood is passed through this chamber, its time of exposure being carefully and automatically adjusted. 5. Starting switch. 6. Synchronized transfusion pump. 7. Dial regulating the rate of flow and time of exposure. 8. Voltmeter.

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Impotence

Impotence may be due to homosexual desire, rapid or premature ejaculation, abnormality or unattractiveness on the part of the wife, or improper position of the wife.

Homosexual desire may, in some cases, be relieved or cured by male sex hor-

mone (testosterone propionate, from 25 to 50 mg., injected two or three times weekly).

When the penis loses erection, either before or very shortly after entrance into the vagina, the condition is due to a weakness of the muscles surrounding the veins of the penis, which cannot remain contracted long enough, with the result that the blood escapes from the veins too soon. If testosterone does not relieve the condition, one may tie off the dorsal vein of the penis (be sure that the *principal* vein is tied off, rather than one of the superficial veins which appear at operation). Lowsley has devised a more complicated operation for suturing the muscles together.

Too-rapid or premature ejaculations are due to congestion and sensitiveness of the prostate. *Gentle* massage of the prostate should be given every 5 days together with weak silver nitrate solution (1:3,000 gradually increased to 1:500) irrigations of the posterior urethra through a Bang's sound syringe. Tea, coffee, and alcohol, as well as "spooning," withdrawal, and other stimulatory practices should be stopped. After the congestion is relieved, faradic treatments may be necessary to strengthen the muscles.

The wife should be examined to see that there are no physical impediments to normal intercourse, that she is clean and not too fat, and that she knows the proper position (knees bent and spread apart.)—MAX HUHNER, M.D., in *Med. Times*, Dec., 1942.

MEDICO-MILITARY NOTES

Field Transfusion Apparatus

Modern warfare requires an increased preparedness for performing transfusions in the various front-line subdivisions of the medical corps, as well as in the main bandaging stations and in the isolated first-aid stations.

The field transfusion apparatus here presented (Fig. 1) consists of a pear-shaped, vulcanized rubber bag of 500 cc.

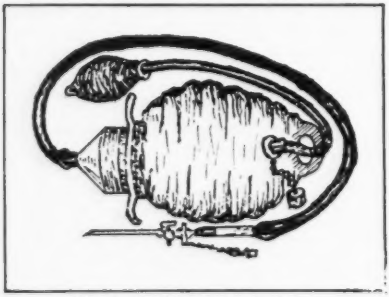

Fig. 1: Field transfusion bag.

capacity, which is capable of withstanding both wet and dry heat as well as cold. Within this outer bag is a second rubber bag (pressure balloon) for compressing the contents by air pumped in by a hand pump to expedite the output. The compressing air does not come in contact with the blood, so that unused blood remains sterile and fit for further storage.

With this method the blood comes into contact with the outside air only while the apparatus is being filled. The customary iron upright is eliminated. The transfusion may be interrupted at any time without vitiating the unused blood. The blood bag, filter, and tubing are cleansed with cold water and, in the event of serious emergency, may be simply rinsed out with boiling citrated water (1 grain sodium citrate to 500 cc. water). When possible, the apparatus should be subjected to dry or wet sterilization. Defective pieces should be replaced. The transfusion bag can be easily repaired in the event of damage by bullets.—RUDOLF BUCHER, M.D., in *Schweitz. Med. Wchnschr.*, Apr. 18, 1942, via *Digest of Treat.*, Jan., 1943.

✦

Draft Deferment in Critical Occupations

Men who have completed one academic year in premedical, predental, preveterinary, or preosteopathic courses; students in any of these four professional schools; interns in medical or osteopathic hospitals or in dental clinics (for one year); and practicing physicians, dentists, osteopaths, and veterinarians, are considered to be in "critical occupations" for the purpose of draft deferment (with certain restrictions and explanations), whether or not they have a commission pending. This arrangement will be in effect until July 1, 1943, unless sooner amended.—*J.A.M.A.*, Jan. 9, 1943.

DIAGNOSTIC POINTERS

Deafness and Endocrines

• Hereditary endocrine insufficiencies have been noted in a number of cases of chronic progressive deafness. Where such conditions can be diagnosed, gland therapy is rational treatment. — C. H. SMITH, M.D., in *E.E.N.&T.M.*, Feb., 1942.

Hypothyroidism in Children

• The hypothyroid child rarely looks like a cretin; in fact, he may be nervous rather than sluggish, and thin rather than fat. Speech defects, slight deafness, and behavior abnormalities may be the principal clues to the condition.—E. JONES, M.D., in *New Orleans M. & S. J.*, Feb., 1942.

Coronary Pain

• Coronary pain may persist *in the upper abdomen* for a number of hours, and tenderness may be found. Biliary colic, perforated peptic ulcer, intestinal obstruction, and acute pancreatitis can be ruled out if *dyspnea* appears, as coronary thrombosis is often accompanied by this symptom. — *Med. World* (Lond.), Dec. 25, 1942.

Tongue Lesions

• Atrophy of the papillae of the tongue and leukoplakia (white patches) on the tongue or mucosa of the mouth may be caused by (1) dietary deficiency; (2) excessive use of tobacco; or (3) syphilis. Eighty percent of patients with papillary atrophy are cured by taking large amounts of brewer's yeast and haliver oil (thus giving vitamins B and A). Both glossal atrophy and leukoplakia are precursors of cancer.—*Nutrition Reviews*, Dec., 1942.

Backache

• Backache above the level of the pelvis cannot be cured by gynecologic surgery, unless ascribable to pelvic focal infection.—A. H. CURTIS, M.D., in "Textbook of Gynecology" (W. B. Saunders Co., Publisher).

Bronchial Carcinoma

• One of the characteristic features of primary bronchial carcinoma is that, on stethoscopic examination, diminution of the breath sounds is marked, with little or no alteration in the percussion note over the area of lung supplied by the affected bronchus. These findings are of such significance that, when present, tissue for microscopic study should be removed from the wall of the bronchus suspected of harboring malignant disease, even when the gross appearance at bronchoscopic examination does not suggest carcinoma.—P. P. VINSON, M. D., in *Va. Med. Monthly*, Nov., 1942.

Dietary Edema

• In cases of chronic albuminuria with a persistent, slight general edema, the edema may disappear within a week when the patient is told to take a diet containing an average amount of protein foods. Such edema is a *starvation edema*, due to the patient having been on a low-protein diet for months, in an attempt to "clear up the albuminuria."—W. MCADAM, M. D., in *Med. World* (Lond.), Nov., 1942.

Prostatism

• Elderly men who are developing an enlarged prostate will sometimes attribute the increased difficulty in micturition to the presence of a hernia, often of long standing. — *Med. World* (Lond.), Nov., 1942.

Indications for Amputation

• When, in any joint, the suppurative processes continue to extend in spite of adequate drainage, and if the general condition of the patient, as shown by fever, loss of appetite, wasting, sleeplessness, and general appearance makes it obvious that the infection is undermining the patient's strength, then amputation will be needed.—V. Z. COPELAND, M.D., in *Brit. M. J.*, May 23, 1942.

Hypoglycemia

• Any *new* symptom, appearing between bedtime and breakfast, may be due to hypoglycemia. If the patient is diabetic, the dose of insulin should be reduced. — *Med. World* (Lond.), Aug. 28, 1942.

THUMBNAIL THERAPEUTICS

Intramuscular Injection of Sulfonamides

• Intramuscular injections of sulfonamide drugs (sodium sulfapyridine, sodium sulfathiazole, sodium sulfadiazine) result in an effective blood level of the drug, which is prepared fresh each day, as a 33⅓ percent solution in distilled water, and injected deeply into the gluteal muscles or beneath the fascia lata in the muscles of the thigh. Six (6) cc. are given, at six- to eight-hour intervals, by the nurse. A needle at least 1½ inches long must be used. This method is used where the drug cannot be retained when given by mouth.—L. HALL, M.D., in *Ann. Int. Med.*, Dec., 1942.

Ulcer Diet

• While diet remains the main factor in the management of peptic ulcer, emphasis needs to be placed on the inclusion of foods rich in iron and the water-soluble vitamins, especially C, if the diet is to be satisfactory.—*J. Am. Dietetics Assn.*, May, 1932.

Wrist Sprains

• The wrist after sprains, should be fixed long enough for the damaged ligaments to heal. Two long adhesive strips are applied from above the wrist to the first knuckles, and secured in place by encircling strips. Immobilization in a plaster cast gives good results. The most troublesome complication of wrist sprains is *tenosynovitis*, which results from inadequate immobilization over too short a period of time. Roentgrams of all wrist sprains should be carefully made, to rule out sprain-fractures and fractures of one of the carpal bones. —L. J. NETTO, M. D., in *South. Med. J.*, Aug., 1942.

Corneal Ulcer

• In cases of severe corneal ulcer, strikingly favorable results may be obtained by giving sulfanilamide by mouth, in 50-grain (3.3 Gm.) doses daily. —*E.E.N.T.M.*, Nov., 1942.

Retained Placenta

○ Before manually removing a retained placenta, (1) catheterize the patient, to rule out distention of the bladder; (2) give 0.25 cc. of Adrenalin (epinephrine); and (3) administer a deep anesthesia.—C. POTTER, M. D., in *Med. World* (Eng.) Sept. 4, 1942.

[Often the straining or vomiting that occurs while the anesthesia is being induced results in the expulsion of the placenta. The physician in a remote district might try the Adrenalin first, as it has been shown to cause good contractions of the uterus; then try to cause sneezing by using pepper, or to induce vomiting. True attached placenta (*placenta accreta*) is *very* rare; usually it is partially or completely separated and merely needs an additional force to expel it from the uterine cavity.—ED.]

Human Bites

• *No human bite injury should ever be sutured.* Cleanse the area thoroughly for 10 minutes with soap and water, and irrigate with physiologic salt solution or clear sterile water before examining the wound. Devitalized tissue should be excised, under general anesthesia or local anesthesia, injected *far away from point of bite*. If a joint capsule has been opened, make collar incisions in the adjacent web spaces for adequate drainage. Sulfanilamide or sulfathiazole powder is applied and the wound dressed. The injured part is splinted; in hyperextension, if an extensor tendon or joint space has been injured.—F. F. BOYCE, M.D., in *South Med. J.*, July, 1942.

Vitamin C in Noma

• Cases of noma (ulcerative, gangrenous involvement of the mouth or throat) may be due, in some cases, to lack of vitamin C. *Treatment:* Give 75 mg. of vitamin C (ascorbic acid), in intravenous injection, daily and use a mild, chlorine-containing mouth wash. The local application of chromic acid and sulfathiazole should be carried out daily. —J. C. BRAUER, D.D.S., in *J. Am. Dent. Assoc.*, Jan. 1, 1943.

NEW BOOKS

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DISEASES OF THE BREAST

Geschickter

DISEASES OF THE BREAST: DIAGNOSIS, PATHOLOGY, TREATMENT. *By* CHARLES F. GESCHICKTER, M.A., M.D., *Director of the Francis P. Garvan Cancer Research Laboratory; Pathologist, St. Agnes Hospital, Baltimore, Maryland; Lt. Commander, Medical Corps, U.S.N.R. Special section on Treatment, in collaboration with Murray M. Copeland, A.B., M.D., F.A.C.S., Instructor of Surgery, Johns Hopkins Medical School; Visiting Surgeon and Assistant Onconologist, University Hospital, University of Maryland Medical School; Visiting Onconologist, Baltimore City Hospitals. 593 illustrations. Philadelphia, London, Montreal: J. B. Lippincott Company. 1943. Price, $10.00.*

Within the covers of this one volume are to be found answers to those questions that perplex the clinician. Is this breast tumor cystic? Why has it suddenly enlarged? What is the normal virginal breast? Is x-ray or surgery preferable for this lesion? How can I best make a complete examination of the breast?

The author has remained on firm pathologic ground yet the book is preeminently clinical. The normal development of the breast and its changes due to endocrine influences, examination and diagnosis of breast conditions, hypertrophy of the breast, the breast in pregnancy and lactation (including mastitis), painful breasts, chronic cystic mastitis, benign and malignant mammary tumors and a final, complete section on *all* methods of treatment, make up the text. Illustrations depict methods of aspiration of cysts, of removal of small tumors, simple and radical mastectomy.

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FRACTURES OF THE JAWS AND OTHER FACIAL BONES

Major

FRACTURES OF THE JAWS, And Other Facial Bones. *By* GLENN MAJOR, B.S., A.M. *(Pathol.), M.S. (Exper. Surg.), Ph.D. (Surg.), D.D.S., M.D., F.A.C.S., Pittsburgh; with chapters on Radiographic Technic by L. M. J. Freedman, M.D., Acting Director, Department of Radiation Therapy, The Western Pennsylvania Hospital, Pittsburgh, and War Aspects of Jaw Fractures, by Arthur Dick, D.D.S., M.D., Major, Medical Corps, Army of the United States. 225 Illustrations. St. Louis: The C. V. Mosby Co. 1943.*

The surgeon who is interested in knowing all the details concerning factures of the bones of the face, will find herein complete discussions as to the methods of managing such deforming injuries. Anatomical and mechanical reasons for displacements of bony fragments are well considered.

The section on anesthesia well presents the case for nerve block anesthesia combined with topical application. General principles of treatment are considered in one chapter, then individual methods for each fracture are considered. The author has no bias in favor of a few types of treatment; all types are mentioned and many are illustrated, so that the surgeon can choose that one most advantageous to the patient. He does rightly condemn the external wiring and plating of mandibular fractures.

Several hundred diagrams illustrate clearly the various methods of retaining bone fragments in proper position.

◆

BURNS, SHOCK, WOUND HEALING AND VASCULAR INJURIES

BURNS, SHOCK, WOUND HEALING AND VASCULAR INJURIES. *Prepared under the auspices of the Committee on Surgery, Division of Medical Sciences, National Research Council. Military Surgical Manuals, Volume V. 272 pages; 82 illustrations. Philadelphia and London: W. B. Saunders & Co. 1943. Price, $2.50.*

It is almost worth a war to have such texts appear. Stripped of theories and technicalities and arguments, there is presented here the few important points of modern diagnosis and treatment concerning the most important aspects of emergency care.

The illustrations are, for the most part, of teaching value, showing different methods of treatment and the various stages of healing. The details of treatment are given simply and directly. It is truly a postgraduate course, given without any attempt to impress with superior knowledge.

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ENDOSCOPIC PROSTATIC SURGERY

Barnes

ENDOSCOPIC PROSTATIC SURGERY. *By* ROGER W. BARNES, M.D., F.A.C.S., *Professor of Clinical Urology, College of Medical Evangelists; Senior Attending Surgeon, Los Angeles County Hospital; Chief of Urology Service, White Memorial Hospital and Out Patient Clinic. 104 illustrations. St. Louis: The C. V. Mosby Company. 1943. Price. $6.00.*

A text concerning a surgical procedure should be well illustrated. This book has been filled with sketches showing different conditions encountered, how they appear through the cystoscope and what surgical methods should be used to correct them. Various methods of estimating the size of the prostate by rectal examination and by cystoscopic measurement are fully illustrated.

The book is much more complete than the title would indicate. A valuable clinical chapter is devoted to indications for endoscopic surgery. The anatomy of the prostate and its pathologic changes are fully covered. The examination of the patient is fully discussed, thus making the work complete in its consideration of every aspect of the patient, his preoperative care, selection of anesthetic, other operative procedures associated with prostatic resection, complications and postoperative care.

The omissions are slight. Continuous spinal anesthetic, using very minimal quantities of procaine solution, is not mentioned. Very brief discussion is given of the bladder neck obstructions in women.

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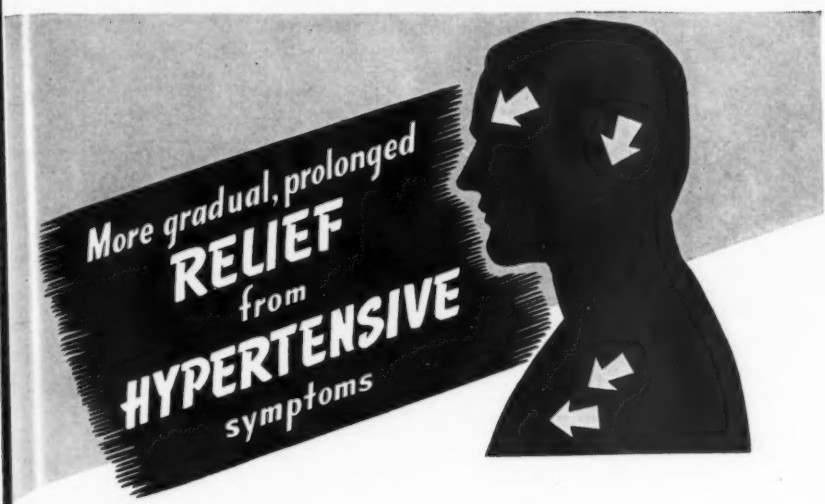

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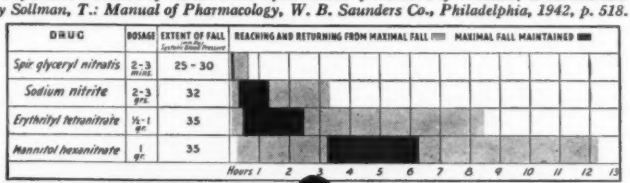

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